

**NJDOT Bureau of Research
QUARTERLY PROGRESS REPORT**

Project Title:	Development of Simulation and Prototype Data Warehouse Models for Evaluating ITS Projects			
RFP Number: Special Project 2003	NJDOT Research Project Manager: Camille Crichton-Summers			
Task Order Number/Study Number: TO-58	Principal Investigator: Chien, Steven I-Jy			
Project Starting Date: 01/01/2005	Period Starting Date: 1/01/2009			
Original Project Ending Date: 12/31/2005	Period Ending Date: 3/31/2009			
Modified Completion Date: 09/30/2008				

Task	% of Total	% of Task this quarter	% of Task to date	% of Total Complete
Task 1: Detailed Literature Review	5	0	100	5
Task 2: Developing Simulation Model for the Studied Network	30	0	100	30
Task 3: Design of Prototype Data Warehouse	10	0	100	10
Task 4: Evaluation of Selected ITS Strategies	35	0	100	35
Task 5 Final Report	10	0	60	6
Task 6 Extended Simulation Network	10	10	70	7
TOTAL	100 %			93.0 %

Project Objectives:

- (1) Develop a microscopic traffic simulation model to evaluate the impact of potential ITS strategies for the studied network, and
- (2) Design a prototype data warehouse model as a reliable data center for storing, processing, and analyzing transportation related data.

Project Abstract:

A traffic micro-simulation model will be developed to evaluate the anticipated traffic congestion due to upcoming construction in the area of NJ Route 139 and the impact of the construction on the Portway's Northern Extension. The boundaries for the network are to be determined, but may be roughly bounded by the following highways:

- NJ Route 3 to the north
- NJ Route 21 to the west
- NJ Turnpike Interchange 14 with US Routes 1&9 to the south
- NJ 440 and US 1 & 9 to the east

This network will be finely defined within the boundaries of the analysis area, but would only include the major routes and arterials outside of the analysis area. The simulation model will be set up in way as to allow for

NJDOT Bureau of Research
QUARTERLY PROGRESS REPORT

future expansion, should further analysis be required on the outlining areas, such as the interchange between US 1&9 and NJ 3. As part of this proposal NJIT will work with the NJDOT as well as the area ITS Stakeholders group to test various traffic mitigation scenarios utilizing ITS simulated tools. The scenarios are: Traffic Signal Improvements, Promotion of Car/Van-pooling, Optimal Diversion of travelers to NJ Transit Hudson-Bergen Light Rail, PANYNJ's Path and NY Waterway and Yellow Taxi Ferry Systems, Variable Message Signs (to be used with Advanced Traffic Management Systems and Advanced Traveler Information Systems), Contra-flow lanes, etc. The use of TRANSMIT readers for traffic data is proposed. The NJIT team would co-ordinate with the NJDOT task member to select the different scenarios to be analyzed. Coordination meetings are proposed. The scenarios will be displayed as video clips suitable to be incorporated into PowerPoint presentations via AVI files.

The proposed work will be done in two phases. Phase I, encompassing Tasks 1 and 2, involves the NJ 139 simulation and will be done within the first four months from the date of award. Phase II, encompassing Tasks 3-5, will be completed in months 5 to 12 from the commencement of the project.

1. Progress this quarter by task:

Original Simulation Network Scope (RT 139): (99% Completed):

- A draft report summarizing the work completed under this task is being prepared.

Extended Simulation Network Scope (Additional Task): (85% Completed):

- Field visits were conducted to estimate traffic volumes in the Tonnele Circle Area.
- The base year simulation networks were calibrated for AM and PM peaks.
- RT139 Contract 3 Construction details (staging plans and estimated schedules) were requested (Feb 20, 09) from NJDOT Project Management (Larry Vogel) and received (received Feb 25, 09)
- St. Paul's Viaduct Construction details (staging plans and estimated schedules) were requested (Feb 27, 09) from NJDOT Project Management (Steve Hochman) and received (received Mar 16, 09)
- Wittpenn Bridge Construction details (staging plans and estimated schedules) have been requested (Feb 27, 09) from NJDOT Project Management (Bruce Riegel), but have not yet received.
- A meeting was held with NJ Turnpike staff (Mar 6, 09) to discuss this project and the upcoming construction work planned for the NJ Turnpike Extension. Details of the NJ Turnpike construction work has not yet been received.

NJDOT Bureau of Research
QUARTERLY PROGRESS REPORT

Project Administration:

- A no-cost extension until June 30, 2009 has been requested, but has not yet been received by NJIT

2. Proposed activities for next quarter by task:

- Receive construction staging plans from NJDOT for Wittpenn Bridge Project
- Finalize the alternatives to be simulated in the model (based upon proposed schedules of construction lane closures or capacity reductions).
- Complete simulations of alternatives and present findings.
- Submit final report for project.

3. List of deliverables provided in this quarter by task (product date):

Presentation of developed simulation network and simulation of tested scenarios

4. Progress on implementation and training activities:

None

5. Problems/proposed solutions:

None

6. Budget summary:

Total Project Budget	\$160,021.00
Modified Contract Amount	\$199,015.00
Total Project Expenditure to date	\$192,520.00
% of Total Project Budget Expended	96.74%